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ORIGINAL ARTICLES.

THE HORSE'S FOOT.

By A. Zundel.

(*Continued from page* 517, *Vol.* 6.)

QUITTOR.

Synonyms.—*Fesselgeschwur*, German; *giarda*, Italian; *gialarrs*, Spanish; *javart*, French.

A name of unknown etymology, by which old hippiatrics designate various affections of the inferior regions of the legs of the horse, donkey and mule, and even of bovines. These possess the common character of a degeneration of a portion of the tissues, that is expelled by the efforts of nature under the form of a slough (*bourbillon*). There is a softening of the mortified structures, and an elimination by suppuration. In several old works these sloughs are called quittors, (*javart*) and this name has been extended to the disease itself.

This name having been preserved by use, notwithstanding the efforts of Vatel in opposition, we shall also employ it, and with Girard, recognize: 1st. The *simple* or *cutaneous* quittor, which is only the furuncle which occurs in the thickness of the dermoid structure nearest to the coronary band. 2d. The *tendinous quittor*, which greatly resembles the felon of man, where a portion of the sub-cutaneous cellular tissue, and of a tendon

sloughs out. 3d. The *sub-horny quittor*, the furuncle of the cutidura of the coronary band itself, the slough involving the superior portion of the laminated tissue. 4th. The *cartilaginous quittor*, or the limited caries of the lateral fibro-cartilage of the os pedis, and which old writers compounded with the horny quittor. We might join to those the furuncle of the frog, (see vol. 6, page 204). We believe it useless at present to enter upon a general consideration upon quittor, and will proceed to examine the pathological phenomena presented by each variety.

A.—Cutaneous Quittor.—This is a simple furuncle of the coronary region of the foot, in that part of the dermis nearest to the coronary band, having, however, a special character on account of the extraordinary thickness and inelasticity of the dermis of the region it occupies, the result being a kind of strangulation of the inflamed tissue beneath, and a very painful compression. It is through error that some authors have designated by the same name, the furuncle of the canon, of the fetlock, and of the coronet.

The hind feet are more subject to it than the fore, and it is more frequent at the heels, at the flexure of the fetlock, though it is also observed on the sides and front of the coronet, in which case it is much more painful. Cutaneous quittor has also been observed in bovines, where, however, as we shall see as we proceed, it is generally complicated with the tendinous variety, and becomes a true felon.

I.—*Symptoms.*—Cutaneous quittor is characterized by an inflammatory tumor or swelling, warm, painful, and tense, of the coronary region of the foot, the color of the skin being but little changed, if it is dark, but if the skin is light then the redness is well marked. This swelling is accompanied with a diffused ædema, extending to the fetlock, or even to the hock. We often find angeioleucites, or rather what we call leucophlegmasiæ. The lameness is generally extreme, and the animal frequently can scarcely rest on the diseased leg. The pain is sometimes so great as to induce general fever and loss of appetite, and the animal becomes dull and depressed. After acquiring certain dimensions the tumor shows a tendency to soften at its summit, its base, how-

ever, remaining hard for a considerable time. Rising more and more, it soon ulcerates at a point from which flows a small quantity of bloody pus, followed by the appearance of the slough, (*bourbillon*). An abscess is now formed in the tumor, which, as it opens, carries with it a portion of the skin, sometimes limited, at others measuring from four to ten centimeters, and there is a slough formed of the subcutaneous cellular tissue which separates by the suppuration with the portion of dead skin. This comes out by degrees. It is still adherent by its base and cannot be pulled out with the forceps unless by tearing and with acute pain, and this is often followed by slight hemorrhage. A few days later it will, however, become entirely loose, and in its place there will remain a cylindroid open cavity extending through the tumor, from its summit to its bottom, and from this a deep wound results, followed by a sero-bloody secretion, mingled with pus. As soon as the slough has taken place, or when it begins, the lameness subsides, as well as all the other phenomena of the pain. The wound heals up rapidly if there is no complication.

Cutaneous may easily be complicated with tendinous quittor if the disease or process of sloughing of the mortified tissues extends to the tendons or ligaments of the region involved. This complication is specially common in bovines, where cutaneous quittor generally gives rise to more swelling and greater suffering than the horse.

This quittor has quite a rapid progress, and may last from eight to fifteen days; very seldom longer. At times it seems to be a single furuncle; at other times there are several existing together. Often again, they come in succession, the first one treated being soon followed by others. This is said to take place principally when the diseased part remains exposed to the action of irritating substances, and relapses are prevented by protecting the part from the effects of these occasional causes.

II.—*Pathological Anatomy.*—It is an inflammation of the very abundant sub-cutaneous cellular tissue of the region, spreading from a starting point; the inflamed tissues are mortified and become gangrenous, and by a process of suppuration, the economy attempts to eliminate them. The slough represents more particu-

larly the inflamed cellular tissue, which is thickened, and which has become filamentous and hard and much impregnated with purulent serosity.

III.—*Etiology.*—Contusions of the region, bruises and punctured wounds are quite frequent causes of cutaneous quittor, but it may also take place without evidence of determining causes. Mud, manure, urine, all filth in which animals have to walk or remain, are also considered as causes. For this reason the disease is more common in the fall and winter, on account of the action of cold at times, and frozen mud. It is also more frequent in cities than in the country. Ray observes that the mud of cities is always more irritating and contains mineral substances, especially lime, alkalines and salts, and other substances. The gutters of some industrial establishments have also a direct irritating action. D'Arboval has observed that the mud of places where mineral springs exist is more irritating, as also are calcareous soils, where cutaneous quittor is more frequent than in any other. Common, large horses, notwithstanding their thick skins—or, rather on that account and on account of the hair which covers it—are more commonly affected than private horses. Towing horses are much more exposed to the disease than those otherwise employed.

IV.—*Treatment.*—As a first direction, during the course of the treatment it is always a prudent rule not to work the animal and to keep it in the stable, the feet being kept dry on a good bedding. An internal treatment is seldom necessary to control the general symptoms; if any is required, ordinary salines will generally be sufficient. It is necessary to assist the process of suppuration of the abscess by emollients, warm baths, poultices of flaxseed or of marshmallows, with melted lard, applied quite warm, or by the application of a mixture of honey and bran or flour. We have applied a coating of blister ointment to the tumor, covered with a warm poultice; the maturing effect is then very rapid. It is often necessary to lance the tumor to reduce the pain and prevent the mortification of a large piece of skin. This operation is recommended by D'Arboval and H. Bouley, and is specially indicated when the tumor is much developed. It is then important to incise in the entire thickness of the dermis

and to a sufficient length, and if necessary to make several parallel incisions which will give rise to a copious flow of blood. In this mode the parts are relieved, the pressure of the tumefaction is reduced and the gangrene diminished, if not entirely prevented. It is necessary—and we insist on this point—to incise so deeply that the tumefied skin is divided in its entire thickness. We have seen blacksmiths thus operate by the introduction of points of cauterization in the summit of the abscess; but this mode, though facilitating the sloughing of the strangulated part and reducing the compression, ought not to be preferred to the incision with a sharp instrument—cauterization is more painful.

When gangrene exists and the abscess is open, the incision is certainly less efficacious than at the outset, but it is not for that reason useless, as it relieves the pain and prevents excessive compression. We do not by it attempt to loosen the slough, which it is advantageous to have detaching loose itself when it holds only by its base. If the abscess, once formed, is slow to ulcerate, making a point of cauterization is a good way to stimulate the escape of the matter of the slough. This mode of opening produces in the part an increase of vital action and forms a sore of benign character, which falls off by the effect of the suppuration formed underneath, and which is nearly always followed by a comparatively speedy recovery. To obtain this radical cure it remains to continue the use of the ordinary means to facilitate suppuration and bring on resolution. If the wound is pale and covered at the bottom with large granulations, it must be dressed first with basilicon ointment and afterward with alcoholic liquids, as spirits of camphor, tincture of aloes, or simply an aromatic infusion; at times baths of sulphate of iron, with a little sulphate of copper, are indicated; or, when the wound has become red, the granulations vascular and of healthy character, a simple dressing of œgyptiacum ointment, diluted in vinegar, is enough. If proud flesh develops itself, it must be cut off. It is important to have the wound covered with a protecting dressing, which must be renewed daily if the suppuration is very abundant, or it may sometimes be left on for two days.

(*To be continued.*)

ACTINOMYKOSIS: A NEW INFECTIOUS DISEASE OF ANIMALS AND MANKIND.*

By George Fleming, F.R.C.V.S., Army Veterinary Inspector.

(*Continued from p. 536, Vol. 6.*)

These are the chief symptoms when the tongue is the seat of the disease. The pimple-like excrescences are often only the size of a pin's head or a millet seed, but they are more frequently larger—from the size of a cherry to that of a walnut, or even greater. The inflammation (if any is present) and interstitial induration appear to proceed from the surface towards the centre, and the growth of the nodules takes place rapidly; and this is evidently proven from the circumstance attending their reappearance when they have been removed by operation. Mr. James has noticed this speedy reproduction, as in a letter to me he writes: "I am of opinion that most of the nodules or tubercles found in the substance of the tongue come to the surface at some time or other. For when treating such a tongue (as the one he first sent), we find sometimes that we have succeeded in curing the ulcers on the surface, but the next day or two we see a regular crop of ulcers and nodules on the surface again, and the poor animal protruding its tongue several inches from the mouth."

The appearance of the tongue, then, is characteristic of the affection, whether inspected while the animal is alive, or examined after death.

In the great majority of cases, there are perceived a more or less considerable number of prominences, on the dorsum most frequently, on one or both sides of the tongue, or over the whole of its surface; these look like nodules or tubercles, sometimes like warty excrescences flattened on the top, and vary in size from a millet-seed, a hemp-seed, or a pea, to that of a walnut; they may be single or in clusters. The tongue is enlarged, indurated, "lumpy," often more or less extensively ulcerated in one or more places; there is very considerable hypertrophy of the submucous and interstitial connective tissue; atrophy or degene-

*From the Veterinary Journal.

ration, more or less marked, of the muscular tissue; and the peculiar yellowish-white round nodules disseminated singly, or in masses throughout, each containing a cluster, or at least a tuft, of the *Actinomyces*. The gums, cheeks, palate or jaws may also be involved.

In addition to the description given of that first sent by Mr. James, as well as the second specimen, I will select that offered by Professor Putz,* veterinary teacher at the University of Halle, though many others might be given.

In February, 1882, Veterinary Surgeon Enke sent to the clinic of the school the tongue of a newly-slaughtered cow, which for a long time—at least six months—had eaten very little. An examination of this tongue was carefully made, and it presented the following appearances: Its posterior part was greatly swollen, and the dorsum extremely elevated; its anterior portion appeared to be normal. About three inches behind the tip were a number of irregular, sharply-defined, warty-looking elevations, which were scattered over the entire upper surface of the organ backwards. They were in size from that of a linseed to a hen's egg, the largest having broken through the mucous membrane, while the smaller ones could be felt as little irregular masses beneath it. The former resembled large, oval, and very much flattened warts, deprived of their epithelium. Their color was pale yellow, and their consistence soft and elastic. The largest of these was on the right side of the tongue, and was flat; it measured 4½ centimeters long, 3 centimeters broad, and 2½ centimeters high. Besides this growth, there were on the same side, towards the under part of the tongue, a great many nodules the size of a linseed, which could be felt beneath the mucous membrane. Large and small tumors of a similar character were found on the left side of the tongue. Above, on the arch of the dorsum, three large, well-defined cicatrices could be felt in the mucous membrane; these had a red appearance, and on their upper surface small irregularities could be felt rising, as it were, from the connective tissue beneath. The central cicatrix was in the

* Die Seuchen und Herdekrankheiten Unserer Hausthiere, Abtheilung 2, seite 599.

middle of the tongue, between the circumvallate papillæ; the others were on each side, towards the margin of the tongue, the left being the largest—12.90 centimeters long and 5.90 centimeters broad. In making a longitudinal section through the tongue, the tissues offered great resistance to the knife, and the cut surface exhibited an immense number of greyish and yellowish-white opaque nodules, imbedded in patches in the pale-red muscular tissue, many of them projecting beyond the level; their size was between that of a linseed and a florin. The largest of these patches was somewhat oval in form, and penetrated, in a stellate fashion, deeply into the tongue substance, as if following the course of the muscular fibres. The upper surface of the section was moderately moist, and studded with a number of millet-sized yellow nodules. The apex of the tongue was the only part of the organ free from these bodies. The weight of the fresh tongue was 2,430 grammes (5 lbs. 7 oz.). All the other parts of the cow, according to Enke, were healthy. Microscopical examination of the new formations or nodules proved them to be composed of masses or tufts of the *Actinomyces*, between the tufts being an abundance of lime salts. The tissue of the tumors had a kind of sarcomatous appearance, but there could be no doubt whatever as to the nature of the disease.

*Actinomykosis of the Bones of the Jaws.**

I have already given Bollinger's description of the disease, as it affects the bones of the jaws. Not unfrequently we have the tongue and jaw, or jaws, affected simultaneously or consecutively—generally the latter. The tumor which forms on or in the bone is apparently of a sarcomatous or fibro-sarcomatous character, according as the actinomykosis is periosteal or myeloid. It often commences in the alveoli of the jaw, and thence

* Gamgee (Dairy Stock) undoubtedly alludes to this affection, though he was unaware of its pathology. He writes: "In young cattle there is a somewhat frequent disease termed by some veterinary surgeons 'osteo-sarcoma,' 'spina-ventosa,' and other inappropriate names. The only term I can give it is fibro-plastic degeneration of bone. There is no recognized cause of the disease. It occurs most readily from two to five or six years of age, and affects steers in preference to bulls; the lower jaw is most frequently seized in the vicinity of

extends into the mouth and the cancellated tissue of the bone, and is accompanied by abscesses and fistulæ. In this situation it has been observed in the ox, pig, goat and dog.

Only one instance has been recorded in the dog—that by Professor Vachetta, of the Veterinary School at Pisa, and which was published this year under the heading of "Macrocellular osteo-condro-sarcoma, with actinomycosis." About two months before the professor saw the dog a swelling appeared, without any assignable cause, upon the posterior half of the right branch of the lower jaw, and rapidly increased in volume. In about twenty days the tense skin became ulcerated, mastication was difficult, and the animal was then brought to the clinic of the school. The ulceration of the skin was now somewhat extensive, and in the centre of this was a small hole, into which a probe could only be introduced two or three millimeters. The tumor was hard as a stone at the margin of the dental alveoli, but became softer towards the lower border of the jaw. With the exception of the ulceration, the skin was otherwise healthy in the neighborhood. The tumor was not hot, neither did pressure upon it cause pain, but difficulty was evidently experienced in moving

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the second or third molar teeth. Sometimes the upper jaw is implicated. . . At a spot on the side of the face corresponding to the roots of the third or fourth grinder, above or below, a small, hot, circumscribed swelling occurs. The animal experiences no inconvenience from it, except when the part is struck or pressed upon. The tumor, however, grows, and pain increases. In some cases the growth is rapid, and in a few months the disease has invaded the larger part of one-half of the upper or lower jaw, and gives rise to severe symptoms, which arise chiefly from disturbed mastication, pain, and often from various cruel methods of treating the disease. The teeth become loose in their sockets, may be affected by caries, and drop out. Anacker says that sometimes a fistula opens into the mouth. . . . It is evidently a morbid condition of the bony structure. On dissecting the skin off the tumor, we find it covered with tough, fibrous tissue, arranged in layers. The fibrous element diminishes towards the deeper parts of the growth, where at various parts *yellow accumulations of a friable, calcular or granular matter are enclosed in solid cavities*, surrounded by bony plates, or a tough, gristly tissue. M. Collignon, veterinary inspector of the slaughter-house of Montmartre (Paris), has observed the disease three times in three hundred oxen, and those he found affected came from the marshy plains of La Rochelle. In the plains of Ferrara, and in the Maremme of Tuscany, the disease is very frequent. Low-bred animals are most subject to it, and its origin is usually attributed to a blow."

the jaw. The mouth was kept half open, and a little saliva flowed from it; the tongue was healthy, and nothing amiss was noticed on the left side or roof of the cavity. The fourth and fifth molars of the right side were pushed upwards by the growth of the tumor, and were a little separated from the adjoining teeth. The mucous membrane of the mouth was healthy, and the gums were not separated from the teeth. There was no swelling in the intermaxillary space, nor towards the neck. The jaw could be moved passively. The disease was diagnosed as osteo-sarcoma, probably complicated with mycloplaxy.

In view of the rapid growth of the tumor and the local and general condition of the animal, as well as the improbability of palliative, surgical or pharmaceutical measures being of any avail, resection of the diseased portion of the jaw was made, and though for some time the prospects of recovery were favorable, yet the dog ultimately succumbed rapidly.

The major portion of the tumor was hard and fibrous, and had a reddish-yellow tint at the inferior part, whitish elsewhere. At the lower curvature the neoplasm became suddenly and regularly lobulated, the connective tissue forming the interlobular spaces being continuous with that composing the envelope of the tumor as a whole. The inferior third of the section showed multitudes of yellow points, irregularly disseminated throughout; there were none in the upper part. The tumor and its fibrous envelope were very slightly vascular. When examined microscopically, the most important feature noted was the presence of numerous disseminated *Actinomycetes* masses, especially towards the inferior part; they were only casually met with in the upper portion, while deeper in the tumor they were very definite in outline and enclosed in a kind of nucleus composed of apparently dead tissue. Many of these radiate fungi did not show the slightest trace of calcification, others were completely invaded by lime salts, and the nodules enclosing them had to be treated with hydrochloric or nitric acid before their contour could be well defined. The fungus appeared in two rather different forms, or rather aspects, which probably depended upon its stage of growth. Cut in the direction of the sarcomatus tissue, intermediate to the

necrobiotic focus, there were observed very numerous small discs composed of fine radiating filaments, one portion of which terminated in a rather dark, punctiform dilatation. These were more abundant in the peripheral tissue of the tumor, which appeared to contain the younger specimens, and of which there were only a few varieties. There was a more adult form, very often two discs together, in which the radiating filaments, starting from the central discs, were not so slender as in the other example, were of various lengths, and the punctiform dilatations at the end were also larger and more numerous. These dilatations, which may be considered conidia in process of maturation, were found in some preparations so developed as to look like true spores, and by their number and minute size they might readily become the active agents of dissemination, far and near, of the micromycetes in the tissues. The other form of *Actinomyces* was composed of a central irregular, or round disc, light yellow or olive tinted, and granular, from which proceeded rays much larger than in the preceding forms. In some of the specimens these rays were approximately equal in length, and altogether the *Actinomyces* did not look unlike the flower Marguerite. In other instances the length of the single filaments varied remarkably; while some of these projected only a short distance from the central disc, others extended in a direct or flexuous manner right into the surrounding necrobiotic elements. When by pressure the *Actinomyces* could be separated from each other into single filaments, and these were highly magnified, they were found to be flexible rods, each terminating in a lance-like bulging, or in an angular, single, bifurcated or trifurcated extremity, with a rounded apice. When yet more highly magnified, there was seen in the centre of each filament a fine axial line, either entire, broken, or in points or dots.

Vachetta terminates his observations by remarking that though the canine species has hitherto shown itself refractory to experimental inoculation, yet this instance proves that it may suffer from the accidental disease; that the fungus may present slight variations in form, not only in the different species of creatures in which it has been found (man, ox, pig, horse, and dog), but

also in individuals and in the different neoplasmata, as is shown by the representations given of it under these circumstances. He was doubtful as to the channel by which it found its way into the tissues—whether by an excoriation, ulceration, or fissure in the gums, or (which seemed more probable) rather by an ulcer or fistulous opening at the lower margin of the jaw.

Subsequent to the date of Bollinger's published observations, Johne had examined thirteen of these cases of myeloid actinomykosis of the jaw (presumably of cattle); ten of these were fresh specimens, and three were old specimens preserved in spirit. Eleven were of the lower jaw, one of the upper jaw, and only one of both jaws. All had evidently a central origin (*centralen ursprung*), though in some cases the disease may have commenced in the periosteal tissue. He describes cases of myeloid actinomykosis belonging to the former, and periosteal actinomykosis denoting the latter. He also mentions a case of fibro-sarcoma of the lower jaw of an ox, in which the tumor was the size of two fists, round, fungous, and fibrous, and which arose from the alveolar periosteum of the middle incisors; it lay beneath the mucous membrane, and produced great thickening of the lip; another instance of fibrous tumor of the gum, apparently of new formation, the size of a hen's egg, which grew from the periosteum at the interior aspect of the junction of the two portions of the lower jaw, at the lower half of the alveolar border. The stroma of the tumor was three millimeters thick, and the mass, like that of the last tumor, contained "nests" (*nester*) of *Actinomycetes*. He likewise alludes to an apparently fibro-sarcomatous tumor on the margin of the gum of the lower jaw of a pig; a tumor [about the size of a pigeon's egg, involving the tongue, and springing directly from the periosteum on the upper surface of both branches of the jaw. In the more dense fibrous tissues, less in the spongy stroma, were many conglomerations of nodules the size of a millet-seed, containing the *Actinomyces* in clusters, many of which were calcified.

Actinomykosis of the Fauces.

The disease generally appears in this region in the form of submucous new formations, or polypi, which have been classed with

the lymphomata or lympho-sarcomata. They are round, fungous, or spongy tumors, covered by apparently normal mucous membrane. There are sometimes several in this situation. They present the same features, histologically, as the nodules in the tongue. Hitherto they have only been found in the ox. Johne describes one of these polypi obtained from the fauces of an ox, as about the size of a fist, round, fungous, and soft, covered by normal mucous membrane, rising from the right side of the cavity, a short distance behind the tonsil. On section, it showed five isolated, round, and generally fine spongy nodules, the size of a walnut. All of these contained conglomerated masses of the fungus.

The symptoms are generally difficulty in deglutition, and even in respiration, with cough, when the tumor is near the laryngeal opening. These tumors may also be the indirect cause of broncho-pneumonia, through their diverting the food into the air-passages. As has been said, tumors and abscesses are rather common in this cavity in the ox tribe.

Actinomykosis of the Nasal Chambers.

The only cases on record, so far as I can ascertain, are those described by Mr. James, and referred to at the commencement of this paper.

Actinomykosis of the Larynx.

Similar tumors to those observed in the faucus, are found in the region of the epiglottis and larynx. They are spongy in structure, and the characteristic nodules and *Actinomycetes* tufts are contained in the fibrous meshes of their structure. In the region of the larynx, these formations cause more or less disturbance and difficulty in respiration.

(*To be continued.*)

ANTHRAX IN NEBRASKA.

By W. A. Thomas, B.V.M.

In answer to a telegram to investigate a disease that was raging in a herd of cattle, I went to Table Rock on Friday, February 23, 1883.

The herd of one hundred and nineteen consisted mostly of two

and three year old steers, with a few yearlings and cows. The greater part of the herd were fed hay and herded on cornstalks, receiving very good shelter in a thick grove along the bank of a creek, from which they drank. Milch cows and yearlings were kept on the opposite side of the creek and fed grain and hay regularly, with plenty of well water. The disease appeared in both parts of the herd.

Symptoms and Pathology.—The animal ceases feeding and ruminating, or partially so. In most cases they become excited and wild, eyes protruding and glaring, chasing pigs, chickens, other cattle; also men. The freaks of their frenzy are quite various—twitching the tail and ears as if bothered by flies, fighting, bellowing as if lost, frothing at the mouth, many lame in left hind leg, some weak in both hind legs, licking the legs, flatus passing the anus, though none were tympanitic; urine clear, in some cases seemed copious; fæces sometimes tinged with blood and usually of a dark brown color, otherwise generally of a normal consistency. This peculiar color is the first symptom noticed in some cases, in the morning when the herd is started up. During the day the animal isolates, is stupid and feeds but little. One treed a man, kept him there over an hour, and would bellow at him if he attempted to come down. One caught a chicken, hooked, tore and ate a part of it, which was afterward found in the rumen. One gored a tub in which water was placed for him; afterwards, he jumped out of the yard, ran to the herd, furiously fought some of them; when again separated a club was throw at him, upon which he pounced, horning and chewing it. A small number were not delirious, and presented but few abnormal symptoms. Pulse and temperature I could not obtain with satisfaction. The different stomachs and contents generally appeared normal. The omasum was sometimes impacted, dry and the mucous leaves easily torn. Portions of the intestines were congested and the mucous surface of a deep red color; liver somewhat softened; kidneys sometimes congested and darkened; portions of the spleen enlarged and the pulp softened, dark and disintegrated. The lungs were normal, though sometimes slightly mottled in the lower portions. In one case I found the muscular portion of the diaphragm very much hypertrophied; also a

large quantity of coagulated serum in the connective tissue on the surface. In some cases the whole abdominal viscera would be very much congested. I found bacilli in the blood. The spinal cord and its meninges appeared normal. There is a black deposit or discoloration of portions of the encephalic pia mater, with which I found myriads of spherical bacteria. At first they appear black, but, on focus, transparent; conjunctiva congested. The cattle were in good condition, though none were extra fat. They commenced dying about February 1st, and in a little over three weeks thirty were dead and others sick. Those that were not shot died in from three to nine days.

The owner of the cattle thought that the disease was hydrophobia, and caused from the bite of an old dog which was taken sick and died a short time ago. Hogs that he had bitten did not suffer any inconvenience afterward.

It seems to me that this outbreak nearly, or quite, evades all the theories as to the origin or cause of anthrax. It commenced when the temperature ran from zero to thirty degrees below. The ground was covered with snow, and had been for several weeks.

Beside a few sporadic cases, this is the third enzoötic outbreak of anthrax I have attended within eighteen months. The duration and symptoms of the disease and of cases in each outbreak are considerably different from either of the others.

Some authors have spoken of difficulty in finding the bacilli; also, that they are motionless. I have had no trouble in finding them, and many times in countless numbers, and they often move with great agility. I have kept specimens mounted two or three hours, during which time many would die, while large numbers gathered around the air bubbles, thus showing that they needed oxygen to maintain life.

I have taken blood from the diseased animals, kept it in a corked bottle and examined it daily. When first examined the bacteria are spherical. They increase in length from day to day, also segmenting. With a sixth objective, I have found a few that appeared to be fully two inches long. When the blood decomposes the bacilli cannot be found. I have reproduced the disease with blood that had been dry for nearly four months. I have

some dry blood over one year old, with which I am confident I can reproduce the disease.

Of the above mentioned herd, up to March 11th, forty-three head have died.

For treatment I only advised change of food and ground.

CLINICAL CHRONICLES.

By A. Liautard.

According to all writers on the subject of the operation of castration in the solipeds, almost every mode of operating presents its objections. While with one the rapidity of the manipulation will become the point sought for and adopted, others will prefer to it one which, though slower in its performance, will at the same time, be safer in its results. It is for this reason that the mode of castration by the clams is probably preferred on the continent to any other. With many the animal is thrown and secured in such a manner that but little fear of accident need be entertained. But many operators, principally on this continent, have adopted the *modus operandi* with the animal standing up. That position, and the section of the spermatic cord with a *rapid* application of the ecraseur, seems to be the adopted mode of most of those who are engaged in that department of veterinary surgery. It is not with the idea of discussing the advantages or objections of any of the modes in which the operation is performed, that we offer these few remarks, but in order to bring to the attention of the practitioner the fact that it seems that this mode of manipulation with the animal standing up and struggling more or less, more or less turning and pulling the cord, besides the possibility, almost unavoidable, of hemorrhage by the rapid division with the ecraseur—this mode of manipulation, we say, is explanatory of the common occurrence of schirrous cord, or champignon, in geldings in this country. In relation to this, we publish the report of a case of that disease, where the tumor was removed by the elastic ligature.

CHAMPIGNON OF THE LEFT SPERMATIC CORD—AMPUTATION WITH THE ELASTIC LIGATURE—RAPID RECOVERY.

By Austin Peters, (Student).

On the 24th of October, 1882, was brought to the hospital of

the American Veterinary College, a brown gelding, six years old, with the following history: Castrated at the usual age; (when about two years old); about two weeks ago a swelling was noticed in the near ingunial region, which broke out and has remained open and discharging since. For some time past he has occasionally shown lameness in the right hind leg.

On examination the parts are found to be the seat of a tumor from four to six inches long, and two or three in diameter. It is well defined, and does not appear to extend upwards into the inguinal canal. It is quite hard, not particularly painful, and it shows posteriorly a small opening, from which pus is escaping. It is a simple intra-scrotal champignon, and it is deemed advisable to operate on him.

On the 27th the horse was thrown and secured for the operation. An incision was made on the tumor, and its covering dissected upwards on each side. Adherent downwards to the envelopes it is free superiorly, and attached to the extremity of the spermatic cord, which is somewhat thickened and enlarged. The ecraseur was placed above the tumor, round the cord, but as the pressure was becoming somewhat tight the instrument broke, and then several turns of elastic ligature were tightly placed round the cord, the ends of it left hanging outside of the wound, and the animal allowed to get up.

October 28th, but little reactive fever—a little anorexia. Adhesions between the tumor and the lips of the wound are detached with the finger.

October 29th.—Better condition, Appetite better; temperature, 101°; parts somewhat swollen; tumor has a livid appearance, and is cool to the touch. Suppuration not very healthy; carbolic solution dressing.

October 31st.—The swelling of the parts has considerably increased; it extends down to the sheath and internal crural region. Tumor much shrunken in size and apparently nearly ready to slough off. Same treatment.

November 2d.—Everything normal. The tumor is sloughing off in pieces, only some small portions remaining attached close to the ligature.

November 4th.—The remainder of the tumor is cut off with the scissors, and the ligature removed.

November 7th, 8th, 9th.—Continues to improve. Walking exercise; the slough of the strings of the cord gradually coming off with the suppuration. Œdema of the parts is subsiding.

November 16th.—Discharged convalescent.

A probably rare affection met with in horses is the formation of abscesses in the pelvic cavity; and when this takes place the most common place where they are likely to open is either through the rectum, and again very commonly at the anus. When in the first case, the manure is often covered with blood or pus; and in the second, a small hole, the opening of the fistulous tract, is found on the margin of the anus, allowing a little flow of thin pus to escape. But there is also another mode in which these abscesses may find their way outside of the pelvic cavity, and where they can give rise to complications, which, if they are not necessarily serious, so far as the life of the patient is concerned, become somewhat of that character by the disfiguration they may leave after them. We refer to the possibility of the pus making its way under the coccygeal aponeurosis, and then producing numerous abscesses of the tail, and the loss of the hair of that appendage, and which might be complicated with disease of the caudal vertebræ, which would necessitate an amputation. The following case illustrates one of those complications, without necrosis of the bones.

PELVIC ABSCESS—MULTIPLE ABSCESSES OF THE TAIL—LOSS OF THE HAIR IN ALMOST THE ENTIRE LENGTH OF THAT ORGAN.

By F. W. Kain, (Student)

On November 3d, 1882, a chestnut gelding, coming six years old, belonging to Mr. E——, of this city, was brought to the hospital of the college. At this time he is said to have been very sensitive about his hinder parts, and will not allow himself to be touched in the region of the tail. A twitch being placed upon him, the house surgeon, Dr. Kemp, examined him and found a slight eruption underneath the skin, which was very irritating. Directions to have him well washed with soap and water were given

and the horse returned home. On the 6th of the same month, three days later, the animal manifested colicky symptoms. Dr. Kemp, who saw him, found him unable to pass his fæces, the rectum being filled with them, and the anus being somewhat swollen. A dose of physic was then given and nothing heard from him until the 11th, when he was sent to the hospital, to remain under treatment. On admission a number of fistulous openings are found round the anus, and under the sides of the tail. They allow the escape of a creamy looking pus, and communicate together, the pus having burrowed its way under the caudal aponeurosis. Upon pressure the pus escaped more or less tinged with blood. After pressing out the pus, the tail was washed out and dressed with carbolic solution and bandaged.

November 14th, a catheter introduced into one of the openings on one side of the anus extends into the pelvis for a distance of about fourteen inches. The discharge is quite abundant. Same treatment.

November 15th, two little abscesses are found on the upper part of the tail. The suppuration seems to diminish from the other openings.

November 18th.—Three other abscesses were found ready to be lanced, in the inferior portion of the tail. All these are dressed with carbolic solution. They communicate together, the injection passing readily from one to the other.

November 20th.—Another large collection on the upper part of the appendage.

November 21st.—The collection at the root of the tail seems more swollen, and gathering.

November 23d.—This has to be again freely opened by large incisions, running right across near the root.

November 26th and 27th.—Seems to be at last doing well. Suppuration diminishes. No new abscesses forming. The hair has fallen off from about two inches from the root of the organ, at places where the abscesses had formed.

November 29th.—The anus is more swollen again.

November 30th.—Rectal examination reveals a large swelling inside, on the left side of the pelvic cavity.

December 1st.—This abscess has ulcerated, and a long probe fails to reach the bottom. A free opening is made to allow the pus to escape.

December 3d.—Swelling less—discharge diminishing.

December 5th.—No more dressing with bandage is applied upon the tail; the wounds dressed with carbolic solution.

6th, 7th and 8th.—Continues to improve and is discharged December 12th—all the abscesses healed, but the tail rough, crooked and deprived of hair, from about two inches from its root to its end—almost too short to allow amputation.

Luxations in our large domestic animals are not very common, with the exception of a few joints, unless they are accompanied with other lesions than those properly belonging to those affections. The powerful means of union of the articulations in horses, and the powerful support that some joints receive from the surrounding muscles, may account for this. There are, however, some joints where the practitioner may meet with the displacement of the articular surface, while again there are some where they are almost unknown. M. H. Bouley, in his article on luxation of the tarsal articulations, says in the twelfth volume of the *Dictionnaire Practique de Medecine, Chirurgie et Hygiene Veterinaire:* "There is not, in veterinary surgery, a good observation of that luxation; in fact, it cannot be but a most exceptional accident, on account of the extreme solidity of the means of union and the deep adaptation of the articular surfaces. At any rate, if it takes place, it must necessarily be accompanied with fracture of the bony edges, laceration of skin, etc.—all lesions too serious to justify an attempt at treatment." We publish to-day, with all reserve, however, the report of an injury of that kind successfully treated, and in which the recovery took place within twenty-one days from the time of the accident.

COMPLETE LUXATION OF THE TIBIO-TARSAL ARTICULATION—RECOVERY.

By W. H. Wray, D.V.S.

On January 15th, 1883, about 4 P. M., a valuable team, the property of Hon. N. P. Otis, became frightened at some boys who

were coasting, and ran away down one of our steepest hills, bringing up very suddenly against a team harnessed to a large truck, which was backed up to the sidewalk, starting them and throwing Mr. Otis's near mare to the ground with great violence. I was called, but being out of town at the time, did not arrive until an hour after the accident occurred, and then found the mare with a complete luxation of the tibia and astragabus of the left hind leg, so that the tibia and the metatarsus formed a complete right angle, the left hoof extending out and anterior to the right hind leg. The mare was helped to the stable, about two blocks off, and thrown upon the right side on a bed of straw, at about 5:30 P. M., and ether being administered through the kindness of S. Hasbrouck, M.D., the flat rope was placed around her ankle and the hoof pulled upwards and outwards as far as possible, with one hand on the metatarsus and the other on the calcareus. The joint was then twisted into place, with a grating sound, apparently with no pain to the patient. It was then placed in strong hickory splints, with linen bandages, and she was allowed to rise, which she did with very little help, and walked to her stall, a large box about fifteen feet away, put in slings and left alone until 9 P. M., when her temperature was 103° F., pulse 80, and respiration irregular and fast. Gave thirty minims of aconite B. P., and twenty minims every two hours after until 9 A. M. of the 16th, when her temperature had fallen to 101⅝° F., pulse 56, respiration regular and easy. Was fed two quarts of bran, with a quart of oats soaked in it, which she ate greedily. As there was some swelling, extending from the superior tibial region to the ankle, the bandages were replaced to accommodate it. Appetite excellent all day; at 9 P. M. temperature was 105⅛°, pulse 60

January 17th, was a little uneasy through the night, but bore a little weight on the toe. Appetite good; temperature 101° F., pulse 48 at 9 A. M.

January 18th, temperature and pulse were normal, the mare standing on the leg long enough to use it a little. Bandages were removed, and leg fomented with hot water and hand rubbed about twenty minutes, when the bandages were replaced.

January 19th, gained more use of leg; began to flex the joint some. Fomentation continued, and swelling about gone.

January 20th, a movable splint, designed by S. Hasbrouck, M.D., was applied, so there was no lateral motion of the leg possible; was no change in the treatment until the 23d, when she was taken out of the slings and walked around the stable, which is quite a large one. Being replaced in the slings, this was continued until the 26th, when she was allowed to go loose in the stall. On the 27th the splint and bandages were removed, she took her exercise every day in the stable—about one-half hour at a time—until February 5th, when she was discharged, apparently as sound on this leg as any. Only a slight swelling of the tarsus remains, which was going down every day; was no stiffness or soreness on trotting.

PATHOLOGICAL PHYSIOLOGY.

CONTRIBUTION TO THE STUDY OF RABIES.

By M. Paul Bert.

The following experiments are reported by the author in relation to the researches of M. Pasteur upon that disease. He says:

1st.—I performed from a furious rabid to a healthy dog the reciprocal transfusion of the totality of the blood. The healthy dog, kept for nearly a year, presented no rabid symptoms. The general condition of the mad dog was so far improved that his life was prolonged about 48 hours.

2d.—I made researches to find out in which of the complex elements, which form the salvia of the mad dog, was the rabid virus. This saliva contains the parotid, maxilliary and sublingual secretions, the buccal and broncho-pulmonary mucous. I then inoculated to series of dogs either the mucous taken from the bronchia or the produce of the salivary glands obtained by squeezing at the time the dog was destroyed, at the most furious period of hydrophobia.

Then, the salivary fluids never communicated the disease, while

that of the pulmonary mucosities produce it. There then is the rabid virus. This explains the variations of action in the saliva of mad dogs.

3d.—I have remarked that the saliva of mad dogs, if it does not give hydrophobia, brings on death in the inoculated animals, in producing serious local lesions, such as large cutaneous sloughs. These accidents prevented me going on with my experiments.

From fifteen inoculations I had seven suppurations, which proved fatal in four. It seems then that rabid animals possess in their tissues septic properties besides the hydrophobic condition.

4th.—The saliva of the mad dog filtrated on plaster proves harmless, while the part that remains on the filter gives rabies. It is then quite probable that rabies is due to a microbe.

5th.—The buccal saliva of the mad dog, like that of the healthy animal, transforms starch into glucose.—*Gazette Medicale.*

UPON HOG CHOLERA.

By M. Pasteur.

The following extract from a letter of the author upon that disease was presented to the Academy of Sciences of Paris: "In my name and that of one of my colleague, Mr. Shuillier, I have the honor to briefly present you a few new facts relating to that disease of swine." * * * * * * Our investigations are summarized in the following conclusions:

1.—That disease is produced by a special microbe, easily cultivated outside of the bodies of animals. It is so delicate that it may evade the most attentive observation. The microbe of chicken cholera resembles it the most. Its form is also that of a figure 8, but finer and less visible. It essentially differs from it in its physiological properties. Without action upon chickens, it kills rabbits and sheep.

2.—Inoculated pure to the pig, in almost inappreciable doses, it rapidly produces the disease, and kills with the habitual character of *spontaneous* cases. It is more fatal in improved breeding.

3.—Dr. Klein, in 1878, published a long work on the disease,

which he called pneumo-enteritis of swine. But he was entirely in error as to the nature and the properties of the parasite. As the microbe of cholera, he described a bacillus with spores larger than the bacteridie of anthrax. Very different from the true microbe of hog cholera, the bacillus of Dr. Klein has no relation with the etiology of the disease.

4.—After assuring ourselves, by direct experiments, that the disease does not recidivate, we have succeeded in inoculating it under a benign form, and then the animal becomes refractory to the deadly disease.

5.—Though we believe new experiments are still necessary to confirm our results, we are at present convinced that, from next spring, the vaccination of the attenuated, virulent microbe of hog cholera will become the great safeguard of hog-breeding establishments.—*Gazette Medicale.*

UPON RABIES.

By M. Pasteur.

Mr. H. Bouley presented at the Academy of Medicine, in the name of the author, the result of his numerous investigations upon rabies. The conclusions are as follows:

1.—Dumb and raving rabies, more generally, all kinds of rabies, proceed from a common virus.

2.—Nothing varies more than the rabid symptoms; each case has, so to speak, its own, and it is almost certain that their characters depend upon the nature of the parts of the nervous system, encephalon or spinal marrow, where the virus is localized and developed.

3.—In the rabid saliva, the virus being associated with various microbes, the inoculation of that saliva may give rise to three kinds of death—by the microbe of the saliva, by the exaggerated development of the suppuration, by hydrophobia.

4.—The rachidian bulb of a person who has died with rabies, like that of any animal in the same condition, is always virulent.

5.—The rabid virus is found not only in the rachidian bulb, but also in all or some parts of the encephalon. It is also localized in the marrow, and often in every part of that organ.

As long as the encephalon or spinal marrow are not in a state of putrefaction, they are virulent.

6.—To produce rabies rapidly and with certainty, one must have recourse to inoculation, upon the surface of the brain, in the arachmoid cavity, by trephining. Inoculation of the pure virus in the circulatory apparatus shortens also the long duration of the incubation stage and appearance of the symptoms. By this method, so advantageous to the experimental study of the disease, rabies declares itself after six, eight or ten days.

7.—M. Pasteur and colleagues have met cases of spontaneous recovery from rabies after the appearance of the first rabid symptoms; never after that of the acute symptoms. They have also met with cases of disappearance of the first symptoms, with reappearance of the disease after a long interval of time (two months). In these cases the acute symptoms were followed by death, as in ordinary cases.

8.—In one of their experiments upon three dogs, inoculated in 1881, two had died after developing a rapid rabies; the third recovered after having shown the first symptoms. Reinoculated in 1882 twice, by trephining, this dog remained healthy. Consequently, though it was mild in its symptoms, the disease did not recidivate. This is the first step in the discovery of the prophylaxy of rabies.

9.—Pasteur possesses now four dogs which cannot take rabies no matter how they may be inoculated, or how strong the virus may be. Dogs used as witnesses, inoculated at the same time, have all died with the disease.—*Academie de Medicine.*

PLEURO-PNEUMONIA IN CATTLE.

REPORT OF THE TREASURY CATTLE COMMISSION ON LUNG PLAGUE, OR CONTAGIOUS PLEURO-PNEUMONIA, ETC.

SIR.—In accordance with the instructions furnished us, to "consult with the collectors of the ports of Portland, Boston, New York, Philadelphia, and Baltimore, with the view of securing appropriate sites and buildings as quarantine stations for im-

ported cattle," this commission first proceeded to visit and carefully examine the cattle quarantine station at Quebec, Canada. The premises there cover over fifty acres of land connected with Fort No. 2, on the bluff south of the Saint Lawrence, and were arranged to accommodate 700 head of cattle; yet we learn that they are proving inadequate and that they are being rapidly extended. At the time of our visit they contained 361 head of cattle, a considerable proportion of them being destined for the United States, and we have learned that the great majority of our western importers prefer to introduce their stock by way of Quebec, where the facilities for quarantine on the government premises save no little trouble and expense. Thus, much of the disbursement for maintenance and carriage which properly belong to the United States is monopolized by the Dominion.

We next visited the various American ports indicated, and made a thorough investigation of the sites available at each. It soon became manifest that with the means available it would be impossible, in almost any case, to secure premises at a practicable distance from the wharves, and having a water-front accessible for disembarkation in all weathers. Failing in this we sought to secure sites on the main lines of rail, so that cattle might be shipped in box cars at the wharves and unshipped directly on the quarantine grounds. After a careful observation of no less than sixty sites offered, we have secured such places for the ports of Portland, Boston, New York, and Baltimore, and the premises are now being prepared for the reception of stock. For New York and Baltimore these inland quarantine stations are in some respects preferable to those on the water front, since the lung plague prevails in these large cities and vicinity, and the cattle when released from quarantine in such a locality would still run some risk of infection; whereas, if detained ten or fifteen miles inland in a healthy country, they can, on the completion of quarantine, start for their destination with no risk whatever. One importation is already in quarantine in the selected quarantine site at Portland, and in a few weeks the other three sites will also be ready to receive cattle. The Philadelphia custom-house reports showed that there had been no importations

of cattle at that port since February, 1881, and consultation with Mr. Rowley, agent of the American line of steamers, and Messrs. Herkness, the principal Philadelphia cattle importers, elicited the fact that there is little probability of any new importations of this kind for some considerable time to come at that port. The regular steamship line to Philadelphia decline to carry cattle on their passenger steamers; it is only therefore, large importations, of one hundred head and upward, which will go far to pay for the use of a special steamer, which can be profitably brought to that port, and importers, resident even in the city of Philadelphia, prefer, in the present state of things, to import by way of New York or Baltimore. We have therefore ventured to advise the omission of Philadelphia from the list of quarantine stations until there shall be a certainty of an influx of foreign cattle at that point.

CONDITIONS REQUISITE TO SECURE THE ADMISSION OF AMERICAN STORE CATTLE TO GREAT BRITAIN.

As stated in our report of last year, after the orders of the English Privy Council in 1879 for the slaughter at the ports of landing of all American cattle, and in consequence of it, this important branch of our live-stock industry suffered a yearly loss of two million dollars. This, however, was on fat cattle only, and makes no account of the traffic in lean American cattle, which, in the absence of the restrictions now imposed, would be sought in large numbers to be fattened on the pastures of Great Britain, nor of the shorthorns and other thoroughbred stock which were formerly exported in considerable numbers to England for breeding purposes. As the immediate result, therefore, of the application of the "slaughtering clause" to American cattle, the United States are now suffering a commercial yearly loss of between two and three millions of dollars, in addition to all the direct losses in disease, death, and incidentals consequent on the persistence of the scourge of lung plague among our home herds. *It is vain to hope that England will remove this restriction so long as we fail to show that the last vestige of the infection has been wiped out from our land.* England has had a far longer

and more bitter experience than we have with this most insidious and dangerous of all animal plagues, and we are safe in saying that no fair promises, no half-way measures, nor even the best devised protective measures or system of inspection, while the work of extinction of the pestilence is still incomplete, will ever move that country from her present position of excluding this pestilence by the slaughter of all cattle coming from infected lands or shake her conviction that this is the only certain method of maintaining an immunity. This conviction has been thoroughly wrought into the English mind by the loss of over four hundred million dollars from this plague alone in the first forty years of its prevalence on the island, by the recollection of herds decimated, by a widespread agricultural distress, by the passage in rapid succession of every cattle insurance company on the island through the bankruptcy court, by the infection of her dependency of Australia, where a million and a half of cattle perished in the first fifteen years, and where the scourge still prevails in spite of the most determined efforts to root it out. If anything further had been wanted to deepen this conviction it was furnished in the successive infection of her other colonies in South Africa, Tasmania, and New Zealand, where, as in Australia, the plague defied all control, and continues to prevail in consequence of the unfenced state of these countries and the constant mingling of the different herds. (For full particulars of these occurrences we beg to refer to our report of last year.)

Persons unacquainted with the nature of this plague and the disastrous experience of it through which Britain and the British Colonies have passed and are still passing, may cling to the belief that some lesser measure—*e. g.*, the examination of exported cattle, the export of cattle from uninfected ports only, the establishing of State cattle commissions with power to quarantine all infected herds reported to them or which they may discover, the appointment of veterinary inspectors of markets, the appointment of a federal cattle commission without power to force an entrance into suspected stables, or to properly dispose of infected herds, or some other measure short of the *accomplished stamping out of the disease*—shall woo from England an abolition of the Privy Council slaugh-

tering order, and secure the admission of American beeves and store cattle to the English markets on the same terms with the native. It is better far that every one, and above all every member of Congress, should face the truth, evident from the first to those acquainted with the malady, and now attested by four years of British restriction, that *nothing short of the absolute and undeniable extinction of this disease in the United States will reopen the British market to our live cattle, and save us those millions that we are now every year prodigally, and we might also say insanely, throwing away.*

IMPORTANCE OF THE EXTINCTION OF LUNG PLAGUE IN AMERICA TO OUR HOME CATTLE INDUSTRY.

The continued existence of lung plague in America will sooner or later lead to the infection of our western herds—the source of our cattle traffic—and this will entail the speedy infection of all the channels of that traffic and of the country at large.

ACTIVITY OF CATTLE TRAFFIC FROM INFECTED DISTRICTS.

The cattle traffic from the infected regions in the eastern States to the west is more active and extensive than was that between the European continent and the British Isles at the time of the infection of Ireland in 1839; more than was that between England and Australia when the latter was infected in 1858; more than was that between Holland and South Africa when Cape Colony became infected in 1854; more than was that between Holland and Massachusetts when that commonwealth succumbed to the disease in 1859; and incomparably more than was that between England and New York when the germ of our present infection was brought from the mother country in 1848. The infection of Ireland and Massachusetts was effected in each case by the introduction of a limited number of Dutch cattle—four or five—while all the other states named were each infected by the arrival of a solitary animal, and at a time when no cattle traffic of any account was carried on between the countries involved. (See our last year's report, pages 9, 14, 17, 19 and 21.) The importations into these countries at the times referred to

were few indeed, and at long intervals, whereas with us, probably not a month passes without the shipment from one of our eastern infected cities of high-bred cattle for the west and south, while at intervals large sales are held at these infected cities and the stock scattered broadcast over the land. This traffic in thoroughbred cattle outward from our infected centers is thus on a far grander scale than it was into the various countries named when they were brought under the pestilence. Our risks are therefore, in this respect alone, far greater than were those of any one of these lands when the scourge was accidentally introduced into it.

TRAFFIC IN COMMON STORE-CATTLE FROM OUR INFECTED CENTRES.

But the above is far from completing the list of our perils. Every summer there is now carried on an active traffic in common native eastern calves, to be matured and fattened at the west. The magnitude of this traffic may be conceived when it is stated that through the market of Chicago alone there passed, in the fifteen months up to the end of August, 1881, store calves to the value of $1,500,000. This has been interfered with somewhat by the prohibitory proclamation of the Governor of Illinois, and by the extensive losses occurring in this young stock, but the real dangers of the traffic have increased rather than lessened. Up to the year 1882 we had no positive proof that these store calves were sent west from the actually infected districts, though there was nothing to prevent their shipment. But the great drain established in the safer regions of Central New York and Pennsylvania and westward has so exhausted the supply in these regions, that young cattle rose in the past year to a prohibitory price, and the dealers were driven to the infected districts and markets to fill their contracts. Last year we urged (page 35 of our report) "that Congress enact such a measure as shall render impossible the infection of the west by the eastern store cattle." During the past year, in the absence of such a law, common young store cattle have been sent west from the infected market of Baltimore, and the infected districts around it, including at least one infected farm. They have also been sent out

from the infected market of Camden, N. J., to the extent, for a time, of one hundred head weekly, many of these going to the west. It is thus shown, by indisputable facts, that we are now in incomparably greater danger of the infection of our western and southern herds than was any one of the countries above named at the time of its infection. The immunity of our western herds, hitherto, has been an extraordinary piece of good fortune; but if this should continue, in the face of the present active and unrestricted movement of common store cattle outward from the infected eastern States, it will border on the miraculous.

EVIL EFFECTS OF INFECTION OF THE WEST—EXTENT OF PROSPECTIVE LOSSES.

To show the certain result of an infection at the source of our cattle traffic, and the inevitable general infection that must follow, it is only necessary to recall the yearly losses in England from lung plague—$10,000,000—as compared with the bovine population, 6,000,000 head. At the same rate the United States, with our 30,000,000 head of cattle, would lose not less than $50,000,000 per annum. The losses in Australia were in the same ratio —500,000 head per annum, out of a bovine population of 2,000,000 head. Those of South Africa were much higher, whole herds of 200 head and upwards often perishing without leaving a single survivor.

SUCH INFECTION IRREMEDIABLE.

Nor is this the worst of the impending infection of the west and south. On the unfenced lands of the south and west this disease must prove as ineradicable as it has in the steppes of Asia and eastern Europe, on the fenceless mountains of central Europe, and on the plains of Australia, Tasmania, New Zealand, and South Africa. Once lung plague has been planted in Texas, or on the plains of Kansas and the west, it must, almost of necessity, defeat every effort to eradicate it. *No country* similarly situated has ever succeeded in rooting it out, and no hope would remain to us but in the entire extermination of the cattle on our unfenced lands (buffalo included.)

PRESENT AND PROSPECTIVE YEARLY LOSSES COMPARED WITH THE AMOUNT REQUISITE TO STAMP OUT LUNG PLAGUE.

At this point we judge it well to expose, in bold tabular form, our present and prospective losses from lung plague, contrasted with the sum necessary to stamp out this plague (once for all) from the United States:

Present yearly losses from lung plague in the United States.	$2,000,000 to $3,000,000	Sum required to stamp out lung plague in the United States.....	$2,000,000
Prospective yearly losses from lung plague.....	50,000,000	Cost of stamping out lung plague..	2,000,000
Capital represented by present yearly losses at 5 per cent.....	$40,000,000 to 60,000,000	Capital required to stamp out lung plague.....	2,000,000
Capital represented by prospective yearly losses at 5 per cent.....	$1,000,000,000	Capital required to stamp out lung plague.....	2,000,000

LEGISLATION NECESSARY TO SECURE THE EXTINCTION OF LUNG PLAGUE IN AMERICA.

If anything more is needful to secure prompt and efficient legislation for the extinction of lung plague, it must be found in the evidence of all history, that every recorded occurrence of this plague which could be traced to its source has been traced to contagion alone; that no new country was ever invaded where contagion was sufficiently guarded against; and that no unwholesome condition of air, earth, water, food, housing, travel, privation or abuse of any kind has ever been shown to produce this disease in any locality into which the germs of contagion had not first been introduced from without. (See our last year's report, pages 4 to 30.)

Legislation for the extinction of lung plague will naturally divide itself into—

1*st. Measures to prevent the removal of cattle from an infected State, Territory or district into another State, Territory or district; and*

2*d. Measures to discover and seclude all infected herds, and to promptly stamp out the infection.*

REGULATIONS FOR THE EXPORT OF CATTLE FROM AN INFECTED STATE, TERRITORY OR DISTRICT.

Every possible consideration with regard to lung plague would require that no cattle shall be allowed to pass out of any

infected State, Territory or district, for store purposes, until they shall have been first certified sound by a quarantine of the requisite duration and stringency. Nothing could be more incongruous or inconsistent than the present condition of the United States law, or rather lack of law, on this subject. The Secretary of the Treasury has judiciously ordered that no cattle shall be imported from the infected countries of Europe, etc., without being submitted to a quarantine of ninety days. The fact that these cattle are all high-priced thoroughbreds, selected and transferred with especial care, and that they have already been subjected to the test of a ten days' ocean voyage, during which latent disease has had an opportunity to develop, in no degree detracts from the soundness of the position held by the Secretary of the Treasury on this matter. The disastrous and irremediable infection of Australia and South Africa was effected by just such thoroughbreds guarded by all these precautions, and subjected to the test of an ocean voyage of sixty to ninety days instead of ten, but without the additional safeguard of quarantine upon arrival. So it was also as regards quality, price and care in the case of the imports that infected Massachusetts and other countries before and since. In contrast with this unimpeachable position of the Secretary of the Treasury, guarding against infection by what is relatively a somewhat unlikely channel, we have absolutely no provision against the diffusion of lung plague from our own infected districts and markets through the unhampered sale of cattle that have been subjected to no especial care, that have been sent to market and will be removed from it in the common uncleansed cattle cars, that have been exposed in the market to thousands of chances of contagion through other stock, through places where other stock have preceded them, through yard attendants, drovers and butchers, and the only recommendation of which stock is, that they are live animals and can be bought at the cheapest and most remunerative rates. This low price, which so strongly recommends these cattle to the dealer, is probably the most dangerous characteristic of all, for no cattle are likely to be parted with so readily and cheaply as those that have been culled by the unfortunate owner from an infected herd and thrown upon the

market with the view of securing what salvage he can; yet our laws allow the removal of these eminently suspicious cattle from the infected markets of Baltimore, Philadelphia, Camden, Jersey City and New York, to whatever State or Territory the purchaser may elect. Numerous instances can be adduced in which infection has recently spread short distances from our large markets in this way, as from New York stock yards into the herd of Mr. Ross in Dutchess County (the first recorded infection of the county), into that of Mr. A. S. Baldwin in Putnam County, into those of Messrs. Hyde and Roach in Westchester County, and into those of the Seligs and Stoltee in Richmond County. These are but straws showing what is going on all the time from our infected markets, and with a disease like the lung plague, which may remain latent in the system of the infected animal for ninety to one hundred days, it would be just as easy to have the disease sent out from these markets to Terre Haute, Kansas City or Cheyenne. It will not be at all surprising if it shall prove that the plague has already been carried to the great cattle-growing regions of the west in some of the extensive shipments made last autumn. If such has really been the case, it may be expected to show itself along the lines of cattle traffic from the infected western center in the course of the coming year. Even in such a dreadful contingency it may still be possible to stamp it out, but only at a great increase of expense and at the cost of a much more serious interference with the cattle traffic, provided always that the pestilence has not yet reached our unfenced cattle ranges.

In view of the above, we beg to reiterate with greatly increased emphasis our recommendation of a year ago, that the *Federal Government shall forbid the movement of store cattle out of any infected State, Territory, or district, into any other State, Territory, or district, except after a quarantine such as is now imposed on the cattle imported from infected foreign countries.*

This prohibition would include New York, New Jersey, Delaware, Pennsylvania, Maryland, Virginia, and the District of Columbia, and should be drawn so that any other State found to be infected might be at once added to the list. (See our last year's report, pages 69 and 70.)

This it is, in our own opinion, clearly the duty of the Federal Government to do, because no such measure can be satisfactorily carried out by State authority alone. In the past, unscrupulous men have made a practice of smuggling infected and suspected cattle across State lines, and when once safely over, the authorities of the first State are powerless to follow and punish them. Similarly unprincipled dealers have driven such infected and suspected cattle into another State, sold them, pocketed the proceeds, and promptly returned across the boundary, leaving the unfortunate purchasers and State officials to deal with the resulting disease as best they could. Nothing can suppress such acts so well as the strong Federal arm, reaching over State lines, and dealing out impartial justice to all.

This prohibition of the movement of cattle out of an infected State is not only essential to the protection of adjacent States from the contagion, but is no less so to enable the officials of the infected States themselves to stamp out the plague within their borders. Between two adjacent States with a long stretch of unguarded frontier, it is impossible to prevent smuggling of suspected cattle without the power of punishing the transgressor wherever found. And so long as much smuggling from State to State is possible, the best suppressive work of the officials of one State must be perpetually marred and their sanitary achievements undone.

For further considerations on this topic, and for suggestions of means whereby sound cattle may be sent through infected States into other States, or for export, we beg leave to refer to our last year's report, pages 70 and 71.

LEGISLATION REQUISITE TO STAMP OUT THE LUNG PLAGUE IN A STATE OR DISTRICT.

The continued prevalence of lung plague in any locality is determined mainly, if not exclusively, by the free movement, interchange, and intermingling of cattle. The disease being the result of contagion alone, such mingling is essential to its propagation. Hence its permanence has been assured in all the large cities invaded, where intercourse between infected markets, dealers'

stables, and dairy herds is incessant; hence, too, it is far more likely to disappear, burnt out by its own fires, when located in country herds on inclosed farms, where no cattle are sold nor bought. (See our last year's report, pages 9–31.)

The *first requisite*, therefore, to the stamping out of the pestilence, is to prevent the commingling of fresh and susceptible cattle with those from infected herds. In other words, no store cattle should be allowed on a highway or exposed place in an infected district; and no two herds should be allowed to pasture on the same or adjacent fields in such infected district, without a special license granted after professional examination of the herd, and a certified history for the preceding six months showing an absence of changes, and, above all, of unexplained or suspicious changes in the *personnel* of the herd.

The *second requisite* is in keeping, namely: no market for store cattle should be allowed to admit any animals from infected districts.

These measures *assured*, the further conduct of the work is easy. The absence of these measures of control has been the grand reason of the comparative inefficiency of the work for the suppressing of lung plague in the different infected States, and of the continued prevalence of that pest after four years of effort. With these two measures efficiently applied in New York City in 1870, three months sufficed to circumscribe the disease to the last four herds, and as these were all known they should have been wiped out in a day; but the subsequent suspension of this control has permitted a renewal and general diffusion of the contagion. (See our last year's report, pages 64–68.)

Further measures are demanded as set forth in our report of last year, namely:

1st. To compel the slaughter of all cattle in public markets to which cattle from infected districts are freely admitted.

2d. To inspect all herds, abattoirs, rendering works, &c., in infected localities.

3d. To slaughter all cattle found suffering with lung plague, and even the whole exposed herd when found expedient.

4th. To indemnify the owners liberally for cattle thus slaughtered to prevent the maintenance and spread of the contagion.

5th. To secure the thorough disinfection of all infected animals, places and things.

6th. To enforce sufficient penalties on all transgressors of the cattle disease laws and orders.

Whether such measures can be constitutionally carried out by the Federal Government is not for us to say. We do not hesitate to state that in our large infected cities the control and restriction of the movement of cattle can only be effectively carried out with the energetic co-operation of the city police. Any authority, therefore, intrusted with this work should have the means of securing their earnest and unflagging assistance. On the other hand the history of the past four years in dealing with this plague, and the facts that no one State from New York southward, infected in 1878, can to-day claim to have stamped out the disease, and that no single large city infected at that time can to-day show a clean bill of health, show only too forcibly that the States must be furnished with a greater incentive to do efficient work than has actuated them in the past. We therefore reiterate our recommendations of last year, that in case Congress should decide that the Federal Government cannot interfere within States to carry out the measures above indicated, it should lose no time in appropriating $1,500,000, to be disbursed by some designated officer of the government, to assist the different States in stamping out this disease, the money to be paid only on the approval of the methods and work by a Federal veterinary sanitary authority, to be created for this purpose.

As an additional argument for such a course, it may be stated that with the exception of New York, none of the infected States have made an appropriation at all adequate to the work to be done, and in some the legislatures are biennial, so that there is no means of applying an immediate remedy to this fundamental defect. Maryland has absolutely no appropriation, and the legislature does not meet until 1884; New York alone has an adequate sum, but it has been left in the treasury, rather than employed to secure effective work, and the limits of the disease have been extended rather than circumscribed.

The appropriation we recommend cannot be objected to on

the ground of excess, as we are now losing yearly by this disease nearly if not quite double the amount asked; and this yearly drain would be completely stopped in one year, or two at most, under the application of the measures proposed. Moreover, the neglect of this matter in the face of the growing trade in eastern calves and store cattle destined to the west, may any day increase our annual losses from units to tens of millions, and even pass it beyond the power of State or nation to eradicate.

NECESSITY FOR QUARANTINE OF IMPORTED RUMINANTS AND SWINE.

Without desiring to travel outside of our prescribed duty of advising on the lung plague of cattle, we do not feel justified in ignoring the danger of the possible introduction of rinderpest, aphthous fever, &c., by other than bovine animals. The deadly plague of the Old World known by the German name of rinderpest, agrees with lung plague in being observed to occur only as the result of contagion, but differs from it in this important particular, that all ruminating animals and also peccaries are susceptible to it. Fortunately, with the exception of Angora and Cashmere goats, ruminants are not likely to be imported from countries where rinderpest at present prevails, save as objects of curiosity or for exhibition. Yet as this disastrous scourage might be imported with these animals, and as the importation of ruminants from the countries infected is so infrequent, the necessary precautions should be adopted, as they may be without any serious inconvenience. The countries where rinderpest prevails more or less constantly are Russia, Turkey, the whole of Asia, the East India Islands, and probably Japan. Aphthous fever, imported into New York on the steamer France in 1881, by reason of the use on board ship of the halters which had been previously employed to tie infected European cattle, exists in most of the countries of Europe, and in Buenos Ayres, Australia, Tasmania, and New Zealand. Like rinderpest it attacks all ruminants, but unlike it, it affects readily all cloven-footed animals, and, much less readily, other animals.

To insure safety, therefore, from these two diseases, it is important that all ruminants and swine imported from any country outside of North America should be subjected to a quarantine of ten

days, and, together with all their appurtenances, should be subjected to a disinfection before release; also that all products of such animals capable of conveying infection should be made the object of prohibition or disinfection.

Seeing that sections 2493 and 2494 of the Revised Statutes do not authorize the Secretary of the Treasury and the President to make regulations under which these animals may be safely imported, we recommend that the attention of Congress should be called to the subject, and that this body should be requested to confer such power by special enactment. Such law should, however, be so drawn as to be applicable to any other danger of the same kind which may at any time threaten any class of our live stock. An extension of the sheep-pox in Europe or an importation of ovine animals from a new source may at any time threaten us with that deadly plague, and similar remarks apply to the extension of rinderpest into western Europe, to aphthous fever, to the quebra bunda of South America, to the horse sickness of South Africa, &c. We therefore recommend that Congress should empower the Secretary of the Treasury, with the consent of the President, whenever in their judgment it shall he necessary, to prohibit the importation of any specific class of animals, and any products of such animals, from any country at the time infected with a dangerous contagious disease, or in imminent danger of becoming so; or so to regulate the importation of such animals and their products as shall in their judgment be necessary for the protection of our native live stock.

We also recommend, in view of a contingency that may possibly arise under our present quarantine system, that Congress shall empower the Secretary of the Treasury to order the instant destruction and proper disposal of all cattle or other animals which during the period of their quarantine may manifest any dangerous contagious disease; together with all other animals detained in the same herd, unless when, in the case of the latter, they can be safely removed to a special quarantine ground, approved by the Treasury Cattle Commission, and detained there under such rigid supervision as the Commission shall prescribe, at the owner's expense.

The urgent need of snch legislation must be manifest to all who will consider the great value of the cattle detained in the quarantine grounds, and the extreme danger of maintaining in these grounds, even for a day, a sick animal which is rapidly multiplying a disease-germ to which the other herds are susceptible. With the preservation of such sick animals the quarantine station becomes an infected place, and in case of the infection of other herds the responsibility must rest on the government, which has compulsorily detained them in close proximity. We trust that this matter may be brought before Congress as a provision rendered necessary by the existing quarantine.

Respectfully submitted.

JAMES LAW.
E. F. THAYER.
J. H. SANDERS.

Hon. CHARLES J. FOLGER,
Secretary of the Treasury.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twentieth semi-annual meeting of this Association was held Tuesday, March 20, at Young's Hotel, Boston. There were assembled over thirty veterinarians, from the different Eastern and Middle States.

The session of Comitia Minora was a short one; the only business before it being the recomendation of candidates for admission to membership. In the general meeting, after reading of minutes, the first business was instructing the Secretary to have printed a number of copies of the Constitution and By-Laws.

The committee appointed to investigate the value of the Pasteur method of inoculation, reported that they could go no further until the arrival of fresh supplies of virus. It is expected that experiments with anthrax virus can be seen in progress at the next meeting of the Association, which will be held at the American Veterinary College, the third Tuesday in September.

The committees on education and intelligence, and diseases, will report at the annual meeting.

The following gentlemen were then admitted as members: Drs. J. H. Frinck, J. Hawkins, Andrew Sherk, A. F. Martin, L. M. Crane.

By different members the following gentlemen were proposed for membership: Drs. Sam'l K. Johnson, F. W. Huntington, W. H. Hoskins, R. Kay, W. C. Bretherton, W. D. Critcherson, Dr. Cotton, A. Peters, J. E. Gardner, Ed. A. McLellan, B. D. Pierce, F. E. Rice, Jos. Skally, Alex. Glass, Chas. T. Gaentner, W. H. Pendry, F. Hanshew.

Communications were then read from different members of the Association who were unable to attend. A letter was then read by Dr. Liautard from the President of the International Veterinary Congress, to be held this fall, in Brussels, praying that a delegate be sent to the congress from this Association. Prof. Liautard was appointed to act as said delegate. Dr. Liautard thanked the Association for this high honor, but begged for a short time in which to consider the matter, his acceptance or rejection to be placed in the hands of the Comitia Minora, which committee was delegated power to act for the Association.

"Papers and Discussion" being the next order of business—the first subject for discussion was spinal meningitis. This proved a very interesting topic—and opinions as to cause and treatment were expressed by most every one present.

President Williamson Bryden then reported a case of what he designated canker of the coronet, a case of about two years standing—the discharge being characterized by an extremely pungent fœtid odor. This animal does daily work in the yards of a chemical establishment. Dr. Bryden further reported an instance of atrophy of the muscles of the right dorsal region as the result of the horse becoming cast.

Heredity came in for a free and spirited discussion.

Dr. Stickney then presented some very fine specimens of diseased bones of an aged pony. The question here was as to the exact nature of the disease. (This case deserves more mention than space at this time will permit, and we shall give the details in an early number of the REVIEW).

Somewhat similar cases of disease of bones were reported by Drs. Bryden, Miller, and Peabody.

Contagious abortion, as occurring in cattle, was discussed. Dr. Michener pointed out the necessity of making clear distinction between sporadic or accidental abortion, and the infectious or contagious form.

Dr. L. H. Howard reported a case of probable scarlatina in the horse. Some discussion followed on the resemblance of this affection to purpura.

The subject of spavin—its causes and treatment—brought many gentlemen into the discussion. The earnestness with which certain theories were advanced, defended, and disputed, showed pretty clearly that this is not a "mutual admiration" society, but one where a person must be reasonably certain of his ability to defend a theory, before he advances one.

The society adjourned to the banquet room, and after partaking to their fill from the sumptuous board, retired again to the discussion of subjects above reported.

A more extended account of these discussions will be forwarded at an early date.

CH. B. MICHENER, *Secy.*

NEW YORK STATE VETERINARY SOCIETY.

The annual meeting of the New York State Veterinary Society was held at the American Veterinary College, Tuesday, March 13, 1883, at eight o'clock p.m., with the President in the chair.

The Secretary being absent, Dr. F. Saunders acted as Secretary *pro tem.*

The following gentlemen responded to the roll-call; Drs. Liautard, Coates, Crane, L. McLean, Burden, Devoe, Dixon and Saunders.

The minutes of the last meeting were read and approved.

The next order of business being the reading of papers and discussion; the essayist of the evening being unavoiably absent, the Society proceeded to the regular order of business.

A communication was read from Dr. Foote, regretting his inability to attend the regular monthly meetings hereafter, and tendering his resignation as Secretary, which was accepted.

A telegram was received from Dr. Michener, stating the cause of his absence, being called out of the city.

The Secretary's report for the past year was read and accepted; since his duties as Secretary of the Society from January, 1882, there has been held thirteen monthly and two special meetings of the old and new societies, the average attendance being eleven members.

A paper has been read at each meeting, and full reports of the meetings, papers and discussions, have been published in the AMERICAN VETERINARY REVIEW each month.

The meetings have been called promptly at eight o'clock in the evening, and a quorum has in no case been wanting.

The Treasurer's report was read and accepted, showing a balance on hand of ninety-eight dollars and seventy-five cents.

The report of chairman of committee on prize awarded to the student of the graduating class of the American Veterinary College who shall pass the best practical examination before said committee, stated that ten students presented themselves for examination, and before it was completed three withdrew. The examination was thoroughly practical, and the entire number showed a well founded basis of practical knowledge. Dr. Rich'd Kay was the choice of each member of the committee. The report was accepted and committee discharged with thanks.

Dr. Coates proposed for membership the names of Drs. Theo. Outerbridge, Rich'd Kay and W. D. Critcherson, all of this city; and Dr. Dixon proposed E. Burget of this city, all of which were referred to committee on membership.

The election of officers of the Society for the coming year resulted as follows: Dr. A. F. Liautard, President; Drs. Michener and Coates, Vice-Presidents; Dr. W. S. Devoe, Secretary; and Drs. A. Lockhart, C. Burden, L. McLean, Jas. L. Robertson and C. B. Michener as Board of Censors.

Dr. Liautard thanked the members for re-election, and spoke of the good results of the meetings of the past, and expressed the hope that the ensuing year will show greater results.

The newly-elected Secretary assumed the duties of his office, and the Society proceeded to new business.

Dr. McLean made a motion, which was seconded by Dr. Coates, that the Secretary be directed to send the sum of twenty-five dollars to the "Fleming Testimonial Fund" as a mark of approbation and appreciation for the efforts of George Fleming in raising the standing of the veterinary profession.

The Chair re-appointed Dr. Michener to read an essay at the next regular meeting, to be held Tuesday, April 10, 1883, at eight o'clock p.m.

The Society then adjourned.

DR. S. DEVOE, *Secy.*

CORRESPONDENCE.

NEW VETERINARY MEDICAL ASSOCIATION.

PHILADELPHIA, PA., February 26, 1883.

Editor of the REVIEW:

For the advancement of the many interests of the veterinary profession, the surgeons of Philadelphia and surrounding towns, have formed the Keystone Veterinary Medical Association, with the following roll of officers: President, Dr. W. B. Miller, Camden, N. J.; Vice-President, Dr. W. L. Zuill, Phila.; Secretary and Treasurer, Dr. A. A. Grange, Phila., who has since offered his resignation to accept a position in the faculty of the new veterinary school at Minneapolis, Minn. At a second meeting his resignation was accepted and Dr. W. Horace Hoskins, Phila., was chosen to fill the offices jointly. The requirements for membership permit those to become members who are graduates of recognized veterinary and medical schools. The society purposes holding monthly meetings for the reading of papers, reports of cases and discussions of the same. At the meeting on Dec. 2d, Dr. Hoskins read, as an opening essay, a paper. entitled "The Need, Use and Work of a Veterinary Society." The writer's views were warmly received, and the outlook for a permanent and valuable association to the profession, is very bright. An invitation is here extended to any veterinary graduate to become a member, who is located in or near our city.

W. HORACE HOSKINS, *Secy.*

ON POLYPI.

LOST RIVER, W.Va., Feb. 15, 1883.

Prof. Liautard:

In the summer of 1870, I had a severe attack of eczema on my arm. Shortly afterwards a polypus began to grow in my right nostril very near the cavity leading into the head. Several regular physicians prescribed for the eczema without effect. They also removed the polypus, once by ligature, and twice with forceps, without cure. Some time afterward a then recent graduate prescribed for the eczema:—carbolic acid, ʒ vi; glycerine, ʒ iii; aqua, ʒ iv. This effected a speedy cure. Being intensly worried with the polypus, I concluded to try the same prescription upon it. I applied it twice a day with the end of my finger. In two weeks it redueed the polypus to a hard shriveled lump, which I then twisted out by the simple use of my forefinger. It has not since returned. Upon my recommendation two similar cases have been effectually treated with the same prescription.

A little more than a year since a similas polypus formed in the nose of a thoroughbread short-horn heifer of mine, and became so large, before I was aware of its existence, that it seemed to close the nostril. I took one ounce of officinal solution of carbolic acid, and added to it three ounces of water, and applied it twice a day for eighteen days and then twisted out the dried up remains. It has not since returned.

Very truly yours,

J. WARD WOOD.

NEWS AND SUNDRIES.

GLANDERS IN MAN.—A stable man in Chicago is said to have died from glanders contracted from a horse.

TUBERCLE ANTIDOTE.—M. de Korab asserts that he has found the employment of helenine to be inimical to the development of the bacilli of tuberculosis.—*W. Med. Reporter.*

SWINE CENSUS.—In 1882 Ohio had 1,624,097 hogs, while in

1878 she had 2,139,910 head. The loss is due wholly to contagious diseases amond swine of that State.—*Prairie Farmer.*

Prolific Cow.—A cow, the property of a Mr. Hume, of Colfax Co., Nebraska, recently gave birth to three fine heifer calves, all of which are healthy and doing well.—*Prairie Farmer.*

Ostrich Farming.—The recently imported ostriches that were taken to California, are still in Woodward's Gardens, a suburban resort. Suitable land has been secured and the birds will soon be removed to it. One bird has already gone to laying.

Remarkable Fecudity.—An English paper cites the remarkable fecundity of a ten-year-old ewe in Pembrokeshire, the animal having reared four lambs each year for three years, and three lambs each year for the remainder of her maternal life—resulting in a total of thirty-four lambs.—*Breeders' Gazette.*

Influenza.—A virulent phase of influenza is prevalent among the horses in the northern and midland counties of England. The disease is so infectious that it may be contracted by a horse at a drinking trough previously visited by a diseased animal. The disease has also broken out in Bristol, where six deaths are reported in one stable and seven in another, through the epidemic. —*Turf, Field and Farm.*

Probable Strangles.—Of all horse diseases infesting various sections of the country, the disease now prevalent in Fargo, Dak., is the worst. The first symptom is a slight swelling under the jaw, which in a short time causes the animal to struggle for breath, and in a few days, to choke to death. Neither fomentations nor outward applications seem to have the least effect.—*Turf, Field and Farm.*

A Pony Farm in Texas.—A Texas exchange describes an 8,000 acre ranch in that State, as entirely devoted to the breeding of ponies. The stock consists of seven Shetland stallions and forty-five Shetland mares, all pure bred, and 200 small spotted pony mares. The lilliputians range over the prairies like sheep and are as gentle as possible. The expenses foot up very little more than a sheep farm the same size, and the profits are more than twice as much.—*Turf, Field and Farm.*

SUPERFŒTATION.—A correspondent of the *Country Gentleman* recently reported a case of a Jersey heifer which produced two perfectly developed calves within five months. It is, most likely, safe to say that this heifer conceived while being pregnant. Such occurrances are rare, though they have been observed in the human family as well. Where the uterus is "double," the explation is easy. In this and similar cases, there must have remained an open passage, through which the spermatozoa reached the ovum.

PLEURO-PNEUMONIA.—The Northwestern Dairymen's Association, which recently met in Mankato, Minn., closed its proceedings by the passage of a resolution calling upon Congress to at once enact effective and stringent laws, and make an ample appropriation to stamp out, as soon as possible, every trace of pleuropneumonia, and by a rigid system of quarantine render its importation impossible. Owners of herds must act together in this matter, and demand efficient protection.—*American Cultiurtor.*

LARGE JERSEY HEIFER.—I have what I think a somewhat remarkable Jersey heifer calf, not yet ten months old, having seven fully-developed teats, and a very broad and clearly-defined escutcheon. She is fawn color, with black points, and measures 5 feet 2 inches from roots of horn to root of tail, and girths 5 feet 7 inches. For a pure blood Jersey, I consider that quite an unusual size, having had no grain whatever. This calf was in heat before she was three months old, and has been in same condition several times since, but I have thought best not to have her served under twelve months old.—*Country Gentleman.*

INTERNATIONAL EXHIBITION.—An international exhibition of a novel character is projected to be held in Paris next autumn, under the auspices of the Société Protectrice des Animaux. The catalogue is to include all apparatus, furniture, &c., connected with the breaking and use of horses. It is possible that the exhibition may become extended so as to embrace appliances employed in the relations of mankind with other animals. The Corporation of Paris have granted the use of the Pavilion in the Champs Elysées for the month of September next for the exhibi-

tion. The society referred to, which has been established over 30 years, now numbers some 6,000 members, and thanks to its efforts in few countries is more done than in France for protection of the animal world.—*New York Sun.*

Wooly Bull.—Barnum's wooly horse is outdone by a wooly bull in Clinton Co., Ill., of which a story is current among credulous persons. It is to the effect that this wooly bull is a cross of a Cotswold ram on a heifer; it is now two years old and has been used to cross several heifers, which are expected to produce wooly calves. This is a great improvement, and as the saying goes, "is important if true." For a dairy cow that will yield a fleece of fine wool two inches long, give a mess of milk and reproduce her kind once a year, will be a very profitable animal, with a fleece of about 100 pounds of wool, a butter record of 700 or 800 pounds of butter, and in time a good pedigree, such an animal should sell judging by the prices of the Jerseys, at $25,000! —*Rural New Yorker.*

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Revue fur Thierheilkunde und Thierzucht, Clinica Veterinaria, Veterinarian, Veterinary Journal, Gazette Medicale, Archives Veterinaires, Recueil de Medecine Veterinaire, Journal de Zoötechnie, Revue d'Hygiene.

HOME.—American Farmer, Spirit of the Times, Turf, Field and Farm, American Agriculturist, Country Gentleman, Rural New Yorker, Ohio Farmer, Breeders' Gazette, National Live Stock Journal, Medical Record.

NEWSPAPERS.—Farmers' Review, Western Medical Reporter, Prairie Farmer, Medical Herald, Home Farm.

PAMPHLETS.—An Investigation into the Parasites of the Pork Supply of Montreal, by W. Osler, M.D., M.R.C.P., London; On Canadian Fresh Water Polyzoa, by the same; On Certain Parasites in the Blood of the Frog, by the same.

BOOKS.—Nouveau Dictionaire de Medecine, de Chirurgie et d'Hygiene Veteranaire, by H. Bouley and others, vol. 12. Report of the Department of Agriculture.

COMMUNICATIONS.—W. Devoe, H. W. Hoskins, W. Wray, H. T. Foote, A. A. Holcombe, W. A. Thomas.